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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,809	05/15/2001	Gerald R. Malan	UOM0207PUSP	1545

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EXAMINER

BANANKHAH, MAJID A

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/855,809

Applicant(s)

MALAN ET AL.

Examiner

Majid A Banankhah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-11, 14-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-11, 14-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/08/04, 01/06/0.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. This final office action is in response to amendment and remarks filed on September 20, 2004.

Applicant's argument has been fully considered but they are not deemed to be persuasive.

Claims 1, 4-11, 14-24 are currently pending in the application and are presented for examination.

Claim Rejections - 35 USC § 103

2. Following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-24 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bullard (U.S. Pat. No. 6,625,657, from hereon Bullard).

Per claims 1 and 11, Bullard teaches a method for profiling network flows at a measurement point within a computer network (system of Bullard, Abstract, receive network flow information from the network entities and to produce records based on the information, and col. 3, lines 27-36, The accounting process 14, as will be described in FIG. 2, has a core process that can handle profiling), the method comprising:

measuring network flows at a measurement point located within routing infrastructure of the computer network to obtain flow statistics (col. 6, lines 27-52, A data collector 52 can be disposed in the network in a path between the entities "A" and "B", such that the data collector 52 monitors some of the packets that comprise a flow between "A" and "B." As a single point

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monitor, the data collector has no concept that there are two ends communicating, and for flow statistic, col. 22, line 58, to col. 23, line 9); and

aggregating the flow statistics to obtain a traffic profile of the network flows at the measurement point (col. 31, lines 7-40, DiffServ enabled networks classify packets into one of a small number of aggregated flows or "classes", based on bits set in the type of service (TOS) field of each packet's IP header. This is a quality of service technology for IP networking is designed to lower the statistical probability of packet loss of specific flows).

The reference Bullard, does not explicitly teach of network flow having invariant features.

However, Bullard in col. 6, lines 27-53, teaches of data collector being modeled as a data collector develops a "connection oriented tracking", and the network can be modeled as pipes having two endpoints", and later in col. 2, lines 38-44 (different protocol types), and in col. 6, lines 15-26, port information (For example, a switch may have a number of Ethernet ports and a host could be connected to one of the ports and in communication with one of the interfaces to transfer information over the network) which are invariant for the reason to facilitates the end communication and data collector being able to communicate between these end point entities and gather information for profiling. Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to use invariant features for the reason to facilitate the end communication and data collector being able to communicate between these end point entities and gather profiling information.

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Per claims 2 and 12, The method as claimed in claim 1 wherein the step of aggregating is based on at least one of the invariant features (col. 15, lines 8-28, Recall that each equipment interface 42a-42g is associated with an flow data collector. Thus, the combination of an equipment interface and a flow data collector support a particular device or technology and collects data from the particular device or technology using a pre-defined format, schedule and protocol specific to that device/technology).

Per claims 3 and 13, the method as claimed in claim 2 wherein the at least one invariant feature is either a source endpoint or a destination endpoint and wherein the step of aggregating is based on distance of the measurement point From the endpoint (col. 7, lines 1-11, The data collector 52 identifies a source and a destination of the traffic. That is, the data collector develops a "connection oriented tracking").

Per claims 4 and 14, the method as claimed in claim 1 wherein the invariant features include source and destination endpoints (col. 7, lines 1-11, source and destination endpoint).

Per claim 5, the method as claimed in claim 4 further comprising identifying typical traffic source and destination pairs for network flows that transit the measurement point based on the source and destination endpoints. The reference of Bullard teaches of pipes having two endpoints and in any network including typical network (col. 7, lines 1-11).

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Per claims 6 and 16, the method as claimed in claim 4 wherein the invariant features include protocol type (col. 2, lines 38-44, different protocol types).

Per claims 7 and 17, the method as claimed in claim 6 where the invariant features include port information (col. 6, lines 15-26, port information (For example, a switch may have a number of Ethernet ports and a host could be connected to one of the ports and in communication with one of the interfaces to transfer information over the network).

Per claims 8 and 18, the method as claimed in claim 1 wherein the step of aggregating is based on temporal, static network and dynamic routing parameters (col. 6, lines 27-52, For a router, normally an address of the object that is connected to that interface might serve as an address. A switch has an IP address that can be used as the destination. The actual device that is connected to the switch or router can be used as an accountable object. Although the traffic is not destined for the router, the data collector can use those identifiers as keys to the endpoints "A", "B.").

Per claims 9 and 19, the method as claimed in claim 1 further comprising identifying desired network flow characteristics based on dynamic routing and topology information (col. 21, lines 26-36, how aggregation is used to provide the data to meet the needs of a specific application. The aggregation performed by the different levels can also be remotely and independently adjusted, as will now be described).

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Per claims 10 and 20, the method as claimed in claim 1 wherein the computer network is the Internet (col. 5, lines 18-39, Data is made available to the Internet service provider via the data distribution layer (FIG. 2) so that the Internet service provider can analyze data in order to differentiate service offerings to different users).

Per claim 21, the method as claimed in claim 3 wherein level of route aggregation is a measure of the distance (col. 7, lines 1-11, the data collector 52 identifies a source and a destination of the traffic. That is, the data collector develops a "connection oriented tracking").

Per claim 22, the method as claimed in claim 3 further comprising utilizing physical and logical router interfaces at a highest level of aggregation (col. 10, lines 27-42, a source and a destination identifier to the metric. In the example of a router link, the metrics that the router interface provides are in the form of "information in" and "information out" e.g., octets in, octets out, bytes in, bytes out datagrams in, datagrams out, faults in, faults out, and so forth).

Per claim 23, the method as claimed in claim 3 wherein the distance is a logical distance with respect to forwarding topology (col. 7, lines 1-11, the data collector 52 identifies a source and a destination of the traffic. That is, the data collector develops a "**connection oriented tracking**").

Per claim 24, the system as claimed in claim 11 where the system is capable of adapting to system resources in a dynamic fashion by reassignment of system resources to deal with possible aggregation levels. The system of Bullard teaches of the limitation in Fig. 21 (FIG. 21 is a

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hierarchical representation of an aggregation adjustment scheme for adjusting the aggregation activity at the levels of the flow aggregation processor and the data collectors).

4. Applicant on page 5 of his remarks argues that: "by this Amendment Applicants' Attorney has amended each of the independent claims to make it clear that aggregating is based on at least one of the invariant features such as either a source endpoint or a destination endpoint and wherein aggregating is based on distance of the measurement point within the routing infrastructure from the endpoint so that the network flow is profiled at the measurement point within the routing infrastructure in proportion to the distance to the measurement point from the endpoint. Clearly, this feature is neither taught, disclosed nor discussed by any of the references of record taken either alone or in combination with one another including the U.S. Patent to Bullard. Support for this feature can be found on pages 16 and 17 of the specification".

In response applicant's attention is directed to the rejection of claims 2, and 3 above for the limitations argued by Applicant. Bullard teaches of STR address and DST address in col. 8, lines 39-40, and col. 10, lines 27-42. He also teaches of "connection oriented tracking", in col. 7, lines 1-11 (The data collector 52 identifies a source and a destination of the traffic. That is, the data collector develops a "connection oriented tracking").

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL

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AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE The application has been amended as follows:

ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Majid A. Banankhah** whose telephone number is (571) 272-3770. The examiner can normally be reached on Monday – Thursday, 8:00 AM – 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756.

Information regarding the status of an application may be obtained from the patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Majid A. Banankhah

2/1/05


MAJID BANANKHAH
PRIMARY EXAMINER